CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1.   An information data management system for managing client information and encounters, comprising:

a host processing system that manages and maintains said client information and encounters; and

a handheld remotely operated processing system that receives data from said host processing system, modifies said data, and stores said data to be forwarded to said host processing system at a different time.

2.   The information data management system according to claim 1, wherein said host processing system further controls means by which data is managed and captured.

3.   The information data management system according to claim 2, wherein said means by which data is managed and captured includes data capture screens built dynamically by a module of said host processing.

4.   An apparatus for electronically capturing data remotely comprising a handheld computing device, said handheld computing device capable of storing said captured data and forwarding said captured data to a server via a gateway.

5.   The apparatus according to claim 4, wherein said gateway comprises:

a communications line between said server and a carrier proxy server;

a communications tower in communication with said carrier proxy server; and

a wireless communications link between said communications tower and said handheld computing device.

6.   The apparatus according to claim 5, wherein said server downloads data to said handheld computing device via said gateway, said downloaded data being encrypted using a first encryption standard.

7.   The apparatus according to claim 6, wherein said handheld computing device uses said downloaded data to capture data remotely and uploads said captured data merged with said downloaded data to said server when a communications link between said handheld computing device and said server can be established, said uploaded merged data being encrypted using a second encryption standard.

8.   The apparatus according to claim 7, wherein said carrier proxy server performs a translation between said first encryption standard and said second encryption standard.

9.   The apparatus according to claim 8, wherein at all times when data is being communicated there is at least one layer of security for said data.

10.   The apparatus according to claim 7, wherein said uploaded merged data is forwarded using extended mark-up language (XML) blocks.

11.   The apparatus according to claim 7, wherein said merged data is stored by said handheld computing device until said data can be forwarded to said server upon establishment of a communications link to said server via said gateway.

12.   The apparatus according to claim 11, wherein said downloaded data and said merged data are stored in a compressed extended mark-up language (XML) form.

13.   The apparatus according to Claim 12, wherein said downloaded data includes forms, stored in compressed XML form, said stored compressed forms being retrieved by a rendering engine, said rendering engine generating data capture screens using said stored compressed forms.

14. The apparatus according to claim 7, wherein said downloaded data, said captured data and said merged data are described using extended mark-up language (XML) data type definitions (DTDs).

15. A method for electronically capturing data remotely, said method comprising:

establishing a first connection by a server with a remote handheld computing device via a gateway at a first time;

downloading data from said server to said remote handheld computing device via said gateway;

storing said downloaded data on said handheld computing device;

disconnecting said server and said handheld computing device from said first connection;

capturing data remotely using said downloaded data and said handheld computing device;

storing said captured data in said handheld computing device;

establishing a second connection with said server via said gateway by said handheld computing device at a second time; and

forwarding said captured data to said server over said second connection via said gateway.

16. The method according to claim 15, wherein said first and second connections are secure connections and said downloaded data is encrypted using a first encryption standard and said forwarded captured data is encrypted using a second encryption standard.

17. The method according to claim 15, further comprising:

merging said downloaded data and said captured data;

storing said merged data in said handheld computing device; and

forwarding said merged data to said server over said second connection via said gateway.

18. The method according to claim 16, wherein a carrier proxy server interposed between a communications tower of said gateway and said server performs a translation between said first encryption process and said second encryption process.

19. The method according to claim 18, wherein at all times when data is being communicated there is at least one layer of security for said data.

20. The method according to claim 17, wherein said forwarded merged data is forwarded using extended mark-up language (XML) blocks.

21. The method according to claim 17, wherein said merged data is stored by said handheld computing device until said data can be forwarded to said server upon establishment of a communications link to said server via said gateway.

22. The method according to claim 15, wherein said downloaded data and said captured data are stored in a compressed extended mark-up language (XML) form.

23. The method according to claim 17, wherein said downloaded data, said captured data and said merged data are described using extended mark-up language (XML) data type definitions (DTDs).

24. An apparatus for electronically capturing data remotely, comprising:

means for establishing a first connection by a server with a remote handheld computing device via a gateway at a first time;

means for downloading data from said server to said remote handheld computing device via said gateway;

means for storing said downloaded data on said handheld computing device;

means for disconnecting said server and said handheld computing device from said first connection;

means for capturing data remotely using said downloaded data and said handheld computing device;

means for storing said captured data in said handheld computing device;

means for establishing a second connection with said server via said gateway by said handheld computing device at a second time; and

means for forwarding said captured data to said server over said second connection via said gateway.

25. The apparatus according to claim 24, wherein said first and second connections are secure connections and said downloaded data is encrypted using a first encryption standard and said forwarded captured data is encrypted using a second encryption standard.

26. The method according to claim 24, further comprising:

means for merging said downloaded data and said captured data;

means for storing said merged data in said handheld computing device; and

means for forwarding said merged data to said server over said second connection via said gateway.

27. An apparatus for electronically managing remotely captured data comprising a server having at least two modules, a first module of said server capable of storing data and forwarding said stored data to a remotely operated handheld computing

device via a gateway, said remotely operated handheld device capable of storing said forwarded data.

28. The apparatus according to claim 27, wherein said gateway comprises:

a communications link between said first module of said server and a carrier proxy server;

a communications tower in communication with said carrier proxy server; and

a wireless communications link between said communications tower and said handheld computing device.

29. The apparatus according to claim 28, wherein said first module of said server downloads data to said handheld computing device via said gateway, said downloaded data being encrypted using a first encryption standard.

30. The apparatus according to claim 29, wherein said handheld computing device uses said downloaded data to capture data remotely and uploads said captured data merged with said downloaded data to said first module of said server when a communications link between said handheld computing device and said first module of said server can be established, said uploaded merged data being encrypted using a second encryption standard.

31. The apparatus according to claim 30, wherein said carrier proxy server performs a translation between said first encryption standard and said second encryption standard.

32. The apparatus according to claim 31, wherein at all times when data is being communicated there is at least one layer of security for said data.

33. The apparatus according to claim 30, wherein said uploaded merged data is forwarded using extended mark-up language (XML) blocks.

34. The apparatus according to claim 30, wherein said merged data is stored by said handheld computing device until said data can be forwarded to said first module of said server upon establishment of a communications link to said first module of said server via said gateway.

35. The apparatus according to claim 33, wherein said downloaded data and said merged data are stored in a compressed extended mark-up language (XML) form.

36. The apparatus according to claim 30, wherein said downloaded data, said captured data and said merged data are described using extended mark-up language (XML) data type definitions (DTDs).

37. The apparatus according to claim 27, wherein said server has a second module, said second module of said server in communications with said first module of said server, and further wherein each of said first module of said server and said second module of said server has access to a database management system for storing and retrieving data including forms for use in capturing data by said remotely operated handheld computing device.

38. The apparatus according to claim 37, wherein said second module of said server includes a plurality of submodules, said plurality of submodules includes a submodule for communicating with said first module of said server, a submodule for emulating screens for said handheld computing device and a dynamic applications generator submodule for one of updating forms of a current application and creating a new application.

39. The apparatus according to claim 38, wherein new applications are created using a library of pre-defined business forms, which said dynamic applications generator submodule customizes.

40. The apparatus according to claim 39, wherein said pre-defined business forms include categories, subcaterories, questions and answers.

41. A method for electronically managing remotely captured data, said method comprising:

retrieving data from a database management system;

establishing a first connection by said server with said remotely operated handheld computing device at a first time via a gateway;

downloading data from said server to said remotely operated handheld computing device via said gateway;

establishing a second connection by said remotely operated handheld computing device with said server at a second time; and

uploading merged data to said server by said remotely operated handheld computing device over said second connection via said gateway.

42. The method according to claim 41, further comprising storing said merged data in said database management system.

43. The method according to claim 42, further comprising:

editing said merged data; and

batching said edited merged data.

44. The method according to claim 43, further comprising:

filing said batched data with a third party;

receiving payments from said third party;

managing said received payments; and

reconciling said received payments with said filed batched data.

45. The method according to claim 42, wherein said first and said second connections are both secure connections.

46. The method according to claim 41, wherein said retrieved data includes forms, schedules and customer data.

47. The method according to claim 41, wherein said merged data includes said downloaded data updated using data captured by said remotely operated handheld computing device.

48. An apparatus for electronically managing remotely captured data comprising:

means for retrieving data from a database management system;

means for establishing a first connection by said server with said remotely operated handheld computing device at a first time via a gateway;

means for downloading data from said server to said remotely operated handheld computing device via said gateway;

means for establishing a second connection by said remotely operated handheld computing device with said server at a second time; and

means for uploading merged data to said server by said remotely operated handheld computing device over said second connection via said gateway.

49. The apparatus according to claim 48, further comprising means for storing said merged data in said database management system.

50. The method according to claim 49, further comprising:

means for editing said merged data;

means for batching said edited merged data;

means for filing said batched data with a third party;

means for receiving payments from said third party;

means for managing said received payments; and

means for reconciling said received payments with said filed batched data.

51. The apparatus according to claim 48, wherein said first connection and said second connection are both secure.

52. An apparatus for controlling means by which data is managed and remotely captured electronically, comprising:

a server having at least two modules, a first module of said server capable of storing data and forwarding said stored data to a remotely operated handheld computing device;

a second module of said server capable of storing data and forwarding said stored data to said first module of said server.

53. The apparatus according to claim 52, wherein said second module of said server includes a plurality of submodules, said plurality of submodules includes a submodule for communicating with said first module of said server, a submodule for emulating screens for said handheld computing device and a dynamic applications generator submodule for one of updating forms of a current application and creating a new application.

54. The apparatus according to claim 53, wherein new applications are created using a library of pre-defined business forms, which said dynamic applications generator submodule customizes.

55. The apparatus according to claim 54, wherein said pre-defined business forms include categories, subcaterories, questions and answers.

56.   A method for controlling means by which care is managed and remotely captured electronically, said method comprising:

retrieving a set of forms for one of a current business application and a set of pre-defined business forms for use in creating a new business application by a first module of said server;

customizing said set of forms for one of said retrieved current business application and said new business application by editing categories, subcategories, questions and answers; and

storing one of said customized forms for said current business application and said customized set of forms for said newly created business application in a memory storage system.

57.   The method according to claim 56, further comprising:

using an emulator for emulating screens of a handheld computing device such that handheld computing device screens displaying one of said customized forms and said newly created customized forms can be viewed;

performing said customizing, storing and using acts iteratively until one of said customized forms for said current business application and said customized forms for said newly created business application have a desired appearance; and

notifying a second module of said server by said first module of said server that one of said stored customized forms for said current business application and said stored newly created customized forms are available.

58.   An apparatus for controlling means by which care is managed and remotely captured electronically, comprising:

means for retrieving a set of forms for one of a current business application and a set of pre-defined business forms for use in creating a new business application by a first module of said server;

means for customizing said set of forms for one of said retrieved current business application and said new business application by editing categories, subcategories, questions and answers; and

means for storing one of said customized forms for said current business application and said customized set of forms for said newly created business application in a memory storage system.

59. The apparatus according to claim 58, further comprising:

means for using an emulator for emulating screens of a handheld computing device such that handheld computing device screens displaying one of said customized forms and said newly created customized forms can be viewed;

means for performing said customizing, storing and using acts iteratively until one of said customized forms for said current business application and said customized forms for said newly created business application have a desired appearance; and

means for notifying a second module of said server by said first module of said server that one of said stored customized forms for said current business application and said stored newly created customized forms are available.

60. A store and forward system for managing electronically captured data comprising:

a server including at least two modules, a first module for generating means by which data is managed and captured and a second module for electronically managing data;

a database management system;

a client including a handheld computing device said handheld computing device capable of storing data forwarded by said second module of said server; and

a gateway.

61. The system according to claim 60, wherein said gateway further comprises:

a carrier proxy server in communication with said server via a communications line;

a communications tower in communications with said carrier proxy server; and

a communications link between said communications tower and said client for communicating therebetween.

62. The system according to claim 61, wherein said server encrypts data for communication to said client using a first encryption standard and said client encrypts data for forwarding to said server using a second encryption standard.

63. The system according to claim 62, wherein said carrier proxy server performs a translation between said first encryption standard and said second encryption standard.

64. The system according to claim 63, wherein said data being communicated between said server and said client at all times has at least one layer of security.

65. The system according to claim 60, wherein data is sent by said client in extended mark-up language (XML) blocks.

66. The system according to claim 60, wherein said client stores forms in compressed extended mark-up language (XML) form.

67. The system according to claim 60, wherein said first module of said server performs the following functions:

configuring high-level application behaviors;

configuring and controlling screen fields;

dynamically outlining and building data capture forms;

dynamically updating data capture forms;

releasing new data capture forms and new versions of data capture forms to the field; and

emulating screens as said screens would be displayed on a handheld computing device.

68.   The system according to claim 67, wherein said data capture forms include categories, subcategories, questions and answers.

69.   The system according to claim 60, wherein said second module of said server performs the following functions:

supporting reviewing, editing, printing and approving of data capture forms uploaded from remotely operated handheld computing device;

supporting entering, listing, searching, viewing and updating of customer and field staff records;

supporting scheduling and schedule management;

supporting an integrated view of events and reminders;

supporting setting up work teams and assignments of work teams;

providing a plurality of pre-defined reports;

importing data records from a legacy system;

controlling security profiles;

enforcing security policies;

batching claims for filing of claims;

filing claims;

managing claims payments;

coordinating claims with insurance benefits; and

reconciling claims payments with filed claims.

70. The system according to claim 69, wherein supporting scheduling and schedule management includes entering and updating appointments/encounters.

71. The system according to claim 60, wherein said client performs the following functions:

selecting an operational mode for said handheld computing device;

downloading forms, schedules and customer information on demand;

rendering data capture screens using said downloaded forms, schedules and customer information;

scheduling encounters/appointments;

displaying customer information;

performing unscheduled services;

displaying running/elapsed time on said handheld computing device;

capturing data using downloaded forms, schedules and customer information; and

capturing a digitized signature using a stylus of said handheld computing device.

72. The system according to claim 71, wherein said operational modes include wireless, wireline and hotsync.

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73. The system according to claim 71, wherein said displayed customer information is retrieved from one of said server, local cache and a newly created customer record.

74. The system according to claim 60, wherein said first module of said server further comprises:

means for configuring high-level application behaviors;

means for configuring and controlling screen fields;

means for dynamically outlining and building data capture forms;

means for dynamically updating data capture forms;

means for releasing new data capture forms and new versions of data capture forms to the field; and

means for emulating screens as said screens would be displayed on a handheld computing device.

75. The system according to claim 60, wherein said second module of said server further comprises:

means for supporting reviewing, editing, printing and approving of data capture forms uploaded from remotely operated handheld computing device;

means for supporting entering, listing, searching, viewing and updating of customer and field staff records;

means for supporting scheduling and schedule management;

means for supporting an integrated view of events and reminders;

means for supporting setting up work teams and assignments of work teams;

means for providing a plurality of pre-defined reports;

means for importing data records from a legacy system;

means for controlling security profiles;

means for enforcing security policies;

means for batching claims for filing of claims;

means for filing claims;

means for managing claims payments;

means for coordinating claims with insurance benefits; and

means for reconciling claims payments with filed claims.

76. The system according to claim 60, wherein said client module of said server further comprises:

means for selecting an operational mode for said handheld computing device;

means for downloading forms, schedules and customer information on demand;

means for rendering data capture screens from said downloaded forms, schedules and information;

means for scheduling encounters/appointments;

means for displaying customer information;

means for performing unscheduled services;

means for displaying running/elapsed time on said handheld computing device;

means for capturing data using downloaded forms, schedules and customer information; and

means for capturing a digitized signature using a stylus of said handheld computing device.

77. The system according to claim 60, wherein said server and said client each include computer readable media in which are stored programs and data.

78. The system according to claim 77, wherein said programs of said first module of said server perform the following functions:

configuring high-level application behaviors;

configuring and controlling screen fields;

dynamically outlining and building data capture forms;

dynamically updating data capture forms;

releasing new data capture forms and new versions of data capture forms to the field; and

emulating screens as said screens would be displayed on a handheld computing device.

79. The system according to claim 77, wherein said programs of said second module of said server performs the following functions:

supporting reviewing, editing, printing and approving of data capture forms uploaded from remotely operated handheld computing device;

supporting entering, listing, searching, viewing and updating of customer and field staff records;

supporting scheduling and schedule management;

supporting an integrated view of events and reminders;

supporting setting up work teams and assignments of work teams;

providing a plurality of pre-defined reports;

importing data records from a legacy system;

controlling security profiles;

enforcing security policies;

batching claims for filing of claims;

filing claims;

managing claims payments;

coordinating claims with insurance benefits; and

reconciling claims payments with filed claims.

80.   The system according to claim 77, wherein said programs of said client module of said server performs the following functions:

selecting an operational mode for said handheld computing device;

downloading forms, schedules and customer information on demand;

rendering data capture screens using said downloaded forms, schedules and customer information;

scheduling encounters/appointments;

displaying customer information;

performing unscheduled services;

displaying running/elapsed time on said handheld computing device;

capturing data using downloaded forms, schedules and customer information; and

capturing a digitized signature using a stylus of said handheld computing device.

81.   A method for operating a store-and-forward system for managing electronically captured data, said method comprising:

configuring high-level application behaviors;

configuring and controlling screen fields;

dynamically outlining and building data capture forms;

dynamically updating data capture forms;

releasing new data capture forms and new versions of data capture forms to the field; and

emulating screens as said screens would be displayed on a handheld computing device.

82.   The method according to claim 81, further comprising:

supporting entering, listing, searching, viewing and updating of customer and field staff records;

supporting scheduling and schedule management;

supporting an integrated view of events and reminders;

supporting setting up work teams and assignments of work teams;

providing a plurality of pre-defined reports;

importing data records from a legacy system;

controlling security profiles; and

enforcing security policies.

83. The method according to claim 82, further comprising:

selecting an operational mode for said handheld computing device;

downloading forms, schedules and customer information on demand;

rendering data capture screens using said downloaded forms, schedules and customer information;

scheduling encounters/appointments;

displaying customer information;

performing unscheduled services;

displaying running/elapsed time on said handheld computing device;

capturing data using downloaded forms, schedules and customer information; and

capturing a digitized signature using a stylus of said handheld computing device.

84. The method according to claim 83, further comprising:

supporting reviewing, editing, printing and approving of data capture forms uploaded from remotely operated handheld computing device;

batching claims for filing of claims;

filing claims;

managing claims payments;

coordinating claims with insurance benefits; and

reconciling claims payments with filed claims.